

STN International – the scientific and technical host

Richard Poynder

Abstract

Traces the emergence, in 1983, of STN International, the major online scientific and technical database host, as a joint venture between Chemical Abstracts Service (CAS), USA, and Fachinformationszentrum Karlsruhe (FIZ Karlsruhe), Germany. The service was originally developed from CAS ONLINE. Describes the specific services provided by STN International and the involvement of JICST, in running the STN International service in Japan in parallel to their own JICST Online Information System (JOIS). Describes: the coverage of STN International; technical developments (including provision of full text and images); questions raised about the service's tax and competitive status and the monopoly and exclusivity of the Chemical Abstracts database; and the controversy surrounding the decision in 1994 to add business files to the service. Notes some pricing issues and the competitors to STN, notably, DIALOG, Questel ORBIT and LEXIS-NEXIS. Concludes that the emergence of CD-ROM and Internet databases will have little significant impact on STN International in the short term.

Background

Unlike many organizations using the epithet 'international', STN International (The Scientific and Technical Information Network) can justifiably lay claim to the term. As the result of a 1983 agreement between the USA-based Chemical Abstracts Service (CAS) – a division of the American Chemical Association – and the German producer of scientific and technical information, Fachinformationszentrum Karlsruhe (FIZ Karlsruhe), STN was launched in May 1984. In November 1987, a third partner, the Japanese Information Centre of Science and Technology (JICST), joined the venture and STN has subsequently grown to become a major international scientific and technical host with a user base that now spans the globe.

The service was originally developed from CAS ONLINE, a local US service that had been operated by CAS since 1980. Suzan Brown, Director of Marketing at CAS, explains the background to the formation of STN thus: 'We knew the majority of scientific research was occurring outside the United States – a fact that was reflected in the use of secondary information services like Chemical Abstracts. We wanted users of our database in other countries to have convenient access and customer service as close to home as possible. We also knew that other scientific organizations were doing important

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development work that we did not want to duplicate and believed that a co-operative network would enable different information suppliers to benefit from each other's accomplishments, and thus provide the greatest benefit to users.'

Adds Dr Bernward Jenschke, Marketing Director at FIZ Karlsruhe: 'We had recognised early on that at least one additional service centre would be needed before STN would accurately reflect the original image of an international service. The entrance of JICST in 1987 was not so much a modification as a fulfillment of the original objective – uniting the efforts of JICST with CAS in North America and FIZ Karlsruhe in Europe made STN a truly global operation.'

It was also felt that by pooling scitech databases under 'one roof', and allowing access to them using the same command language, it would be possible to offer specialized databases that supermarket hosts like Dialog and DataStar did not offer. In retrospect, it has proved a winning formula – by adopting its focused approach, STN has been able to develop an online service that offers a combination of files, commands and support services of unique value to scitech searchers. A combination that supermarket hosts have proved unable to match.

Today, STN hosts over 200 files. Consisting of a wide range of bibliographic, numeric and full-text files, the service has strong emphasis on chemistry, regulatory compliance (including national substance inventories), technical and pharmaceutical data. It also offers a range of industry-specific information, from engineering to the rubber, plastics and adhesives industries; plus a number of general business files that includes INVESTEXT, ABI/INFORM and PROMT.

In addition, recent years have seen patent coverage on STN grow dramatically and the service now offers more than 20 patent-related files, including some of the world's most important files from providers like Derwent, IFI and patent offices in the USA, Europe and Japan. The service also offers a number of exclusive files, including the CA abstracts file, CHEMLIST, CHEMCATS and MARPAT files.

The STN partners

CAS

Founded in 1907, the genesis of CAS was a virtual one-person operation of the American Chemical Society (ACS). Only in 1956 did it acquire the name Chemical

Abstracts Service, when it was elevated to divisional status within the ACS. Located on a 55-acre campus near Ohio State University, in Columbus, CAS now employs around 1350 people, including about 800 scientists from numerous disciplines, who analyse and index hundreds of thousands of documents to build CAS's databases. Since 1907, CAS has published more than 16 million abstracts from the chemical literature (13 million of which are now available online).

In the early days, CAS's focus was exclusively on print publications and this remains an important part of its activities. CAS's best-known publication is *Chemical Abstracts* – a weekly issue of more than 9500 abstracts of findings in chemistry, chemical engineering and related fields that have been reported in journal articles, patents, technical reports, dissertations, conference proceedings and books around the world.

A pioneer in the computerization of scientific information, CAS developed, in 1965, the CAS Registry System – designed to identify and record chemical substances reported in the literature. CAS began to sell its data in electronic form in the early 1970s and now has 10 databases. Apart from traditionally defined chemistry, these also cover areas like biochemistry, biotechnology, pharmaceuticals and patents – all of which are available on STN.

CA is a bibliographic file providing access to the abstracting and indexing information published in *Chemical Abstracts* since 1967. REGISTRY is a companion file that allows for chemical substance searching and identification. It is the largest file of substance information in the world and can be searched by using structures, substructures or text terms, including molecular formulas and chemical names. Likewise, proteins and nucleic acid sequences are searchable by inputting the desired string of amino acid or nucleotide codes.

CAOLD supplements the CA file by providing access to the approximately 700 000 documents abstracted in *Chemical Abstracts* before 1967; CAPreviews gives a preview of documents that will be appearing in the CA file; CAPplus contains the complete content from CA and CAPreviews, plus abstracts of document types not included in CA – such as letters to the editor for more than 1300 key journals. The CIN file is an online version of another of CAS's printed publications, *Chemical Industry Notes*, and CHEMLIST contains data on chemicals subject to regulation by the Environmental Protection Agency under the US Toxic Substances Control Act.

CASREACT and MARPAT are more recent developments. As such, they have no printed counterpart.

CASREACT is a file of more than one million organic chemical reactions appearing in the literature since 1985 and MARPAT is the file of Markush structures – generic chemical structures used legally to protect classes of compounds that have appeared in the patent literature since 1988. Finally, CHEMCATS – launched on STN last November – is an electronic file of catalogue information listing available chemicals and their worldwide suppliers.

In addition, CAS has recently released a number of subsets of its data, including CA on CD-ROM and Sci-Finder, an innovative Windows (and Macintosh) product that provides direct online access to CAS databases, either by direct dial or via the Internet with the aim of making CAS's data directly available to scientists at their desktop. More recently, it launched Chemical Patents Plus, a new Internet service providing access to US patents, which includes hypertext links to 2-D and 3-D structure views of cited chemical substances.

At launch, CAS's chemical databases formed a core component of the fledgling STN service and CAS operates the US Service Centre for STN. As well as being responsible for developing the Messenger search software for STN, CAS designed STN Express, STN's off-line search software.

In the 1980s, CAS was also commissioned, with Planning Research Corporation, to develop and install a multi-million dollar computer system for the US Patent and Trademark Office (PTO); a system that automated patent processing and made the PTO the first automated patent office in the world.

FIZ Karlsruhe

Located on the premises of the Research Centre Karlsruhe, in Germany, FIZ Karlsruhe was created as a limited liability company in 1977, following the merger of five renowned German scientific institutions. FIZ operates on a national level on behalf of the German Federal Ministry for Research (BMBF) and German Federal States as the principal German online host focused on the sciences. 'Our mission', says scientific director Professor Dr Georg Schultheiss, 'is to intensify technology transfer and to promote innovation by assembling and marketing information for science and education, research, business, industry, and governmental bodies.'

Like CAS, FIZ Karlsruhe produces and provides a number of printed information services. The most important publications are *High Energy Physics Index*, *Mathematics Abstracts/Zentralblatt fuer Mathematik*

und ihre Grenzgebiete, *International Reviews on Mathematical Education/Zentralblatt fuer Didaktik der Mathematik* and *Reports in the Fields of Science and Technology/Forschungsberichte aus Technik und Naturwissenschaften*. Funded by the German Federal Government and its Federal States, FIZ Karlsruhe is also involved in a number of projects related to energy conservation and protection of the environment.

FIZ also produces a number of scientific and technical databases. These include databases in the fields of energy (ENERGY/ENERGIE), nuclear research and technology (INIS), aeronautics and astronautics (DELURA), mathematics (MATH, MATHDI), computer science (COMPUSCIENCE), as well as reference databases for conferences (CONF), grey literature (SIGLE) and research reports (FTN) – all of which are available on STN.

Following the merger of the INSPEC and PHYS databases, FIZ Karlsruhe also provides input for the physics subset of INSPEC, the internationally renowned database produced by the UK-based Institution of Electrical Engineers. Also available on STN, INSPEC is the world's most comprehensive, high-quality physics database and includes information on electronics and electrical engineering, computers and control engineering, as well as information technology.

In addition to operating the European Service Centre for STN, FIZ Karlsruhe was responsible, in cooperation with Kramer, Hofmann, of Saarbrücken in Germany, for the development of the Professional File System (PFS 2000). PFS is a user-friendly database management and retrieval system that allows users to create their own personal databases. Using content from a range of sources, including STN searches, CD-ROMs and scanned patent documents from the company's archives, users can build up their own customized internal databases.

FIZ Karlsruhe is also involved in a number of partnership projects designed to improve the range of electronic services on offer to users. For example, in partnership with German publisher Springer-Verlag and the German Learned Society (Gesellschaft für Informatik, GI), FIZ is working on a project entitled MEDOC (multimedia electronic documents). This consists of creating 20–25 electronic journals and digitizing around 200 books in the area of computer science literature, with the intention of making the full text available electronically.

Additionally, FIZ Karlsruhe is participating in the FASTDOC (fast electronic delivery of documents) and SUBITO (accelerated literature and information services) projects. It is also a partner member of the

DBV-OSI initiative, which aims to provide seamless connectivity between a number of German online hosts and library systems using the international Z39.50 standard.

As well as providing access to online files, FIZ Karlsruhe can, in agreement with the producers, supply the complete contents, or subsets, of STN databases via other electronic media, including magnetic tape, diskette and CD-ROM. Subjects include mathematics, energy, crystallography, nuclear technology and technology assessment. The CD-ROMs are produced by FIZ Karlsruhe, using its PFS 2000 database management system.

JICST

Founded in 1957 and funded jointly by the Japanese government and the private sector, JICST is the central organization for information activities in the fields of science and technology in Japan. As such, it collects, processes and disseminates information generated both in Japan and around the world, including periodicals, technical reports and conference proceedings. Currently, it collects information from more than 60 countries and produces over 700 000 abstracts a year.

JICST produces a number of databases, including JQUICK – a Japanese-language bibliographic database constructed from its abstracting services and covering all fields of science and technology – and a number of English-language databases, including JICST-EPLUS – an English-language version of JQUICK – and JGRIP, a database covering ongoing and completed research projects in science and technology in Japanese public research organizations. The latter two databases are both available on STN.

As well as running the STN International Tokyo Service Centre, JICST also operates two Japanese online information systems: the JICST Online Information System (JOIS) and the JICST Online Factual Database System (JOIS-F). JOIS was launched in 1976 and, as well as providing access to its own bibliographic databases, it provides access to a number of other major databases and offers the ability to search MEDLINE using Japanese keywords. Launched in 1985 JOIS-F offers seven databases, including the JICST Chemical Dictionary Database, the JICST DNA Database and the JICST Crystal Structure Database.

JICST also offers its series of 12 abstracting journals on CD-ROM, with titles that include *Chemistry* and *Chemistry Industry* (available in both English and Japanese), *Engineering and Management Science* and *Systems Engineering*.

STN International

The STN online service is based on a distributed database system, with about 60% of the files currently held at the US Service Centre in Columbus and 40% at the European Service Centre in Karlsruhe. However, users do not need to know where a database is physically located as STN operates a fully integrated network and the actual location of any database is irrelevant to users – they simply establish online contact with the nearest STN Service Centre.

Coverage

On launch, STN began by offering access to the CA and REGISTRY files in the USA and the PHYSICS BRIEFS file in Germany. In 1986, the first full-text file was added, with Chemical Journals of the American Chemical Society (CJAS) being loaded onto the system. That same year, STN saw the launch of its first patent file, IFIPAT (offering all front page and bibliographic data from US utility patents, plus reissue patents and defensive publications).

Other key moments in the expansion of coverage include the launch, in 1990, of the National Library of Medicine's MEDLINE file, now an essential part of STN's bioscience cluster of databases; 1993's launch of Derwent's World Patents Index – the world's leading patent database, containing more than 7.2 million patent records from 40 countries around the world; in 1994, the addition of the Institute for Scientific Information's SCISEARCH file – a multidisciplinary scientific and technical database containing bibliographic information and cited references from approximately 5000 of the world's leading scientific, technical and medical journals.

Last year, STN reached the 200-database milestone and now offers a comprehensive collection of scitech files that stretches from USA-based Engineering Information's engineering and technology database, Compendex; through Beilstein, which contains organic chemical structures, preparation and reaction information, plus numeric property information; SWETS-CAN, a table of contents database covering 13 000 core journals; to a wide range of subject-specific databases serving a variety of industries, from the rubber, plastics and adhesives industries (RAPRA) to the pulp and paper, packing, printing and publishing industries (PIRA), and many more.

In addition to the Derwent files, STN now offers a wide range of international patent information from

the European Patent Office's international patent file, INPADOC, US patents from IFICLAIMS and USPAT-FULL (which now includes full text and graphics) and Japanese patent information (in English) in the JAPIO file. For those in need of patents filed in the German Patent Office (which includes patents filed by non-German companies), there are the PATDPA and PATDD files. Finally, the PATOS files (produced by Wila Verlag) contain patent publications from both the German and the European Patent Offices (DPA and EPO) and the World Intellectual Property Organization (WIPO).

The most recent addition to the patent portfolio is the Derwent Patents Citation Index, which contains every citation appearing in all patents from 16 patent-issuing authorities, including the US, Japanese and World patent offices.

Technical developments

STN has also undergone a continual process of technical improvement since its launch. Over time, a number of enhancements have been made to STN Messenger, the search language at the heart of the online system. In particular, 1992 saw the introduction of a capability to search multiple databases simultaneously. At the same time, a number of file 'clusters' were created to facilitate subject searching based upon current research needs. Using database clusters, users can now undertake comprehensive subject-based cross-file searches on around 50 clusters, ranging from chemistry; bioscience; pharmacology; energy research and technology; patents and physics.

With last year's launch of SmartSelect it is now possible both to identify and remove duplicate answers and to rank and analyse retrieved data. SmartSelect also enables searchers to carry data and search expressions from one file to another. So, for instance, a user can undertake a search in the CA file, cross over to Derwent's WPI file and, in the process, pull all the patent numbers from the CA file in order to automatically construct a search in the Derwent file. Other recent developments include the introduction, in 1992, of an enhancement to the PRINT command to allow users to deliver search results electronically and, last year, an option for fax delivery of search results.

Those needing to obtain the original literature from search results can use STN's document delivery service. This enables the full text of records retrieved in a search to be directly ordered online from the relevant document supplier. For literature not available through conventional means, FIZ Karlsruhe has devel-

oped its own document delivery service, providing photocopies both of original literature and grey (non-conventional) literature. The library devoted to this currently holds 2.2 million documents.

Users who lack the time or facilities to search for the information themselves can use STN's SDI service. All they need to do is supply profiles outlining the specific interests of themselves or their companies. Then, every time specified STN files are updated, the user's SDI profile is run against the database and relevant retrieved references or abstracts are either displayed online, mailed out as off-line prints or delivered by fax, e-mail or diskette – depending on the user's requirements.

In 1988, we saw the launch of STN Express, a simplified front-end for personal computer users. Apart from offering user-friendly point-and-click functionality, STN Express enables them to save money by preparing searches off-line and includes built-in graphical functionality to enable users to draw chemical structures and then log on and search on those structures. Since launch, STN Express has undergone several upgrades.

Two exciting recent developments include the introduction of images and full text to the online service. At the beginning of 1994 Derwent released selected patent images in the WPI file and currently users can access approximately 1.9 million chemical structures, technical drawings and graphical images from the original patent documents – a great help to searchers when it comes to isolating relevant patents.

Links have also been introduced to full-page images in ACS journals, allowing searchers to identify citations of interest within the CJACS file (containing the full-text file of 19 ACS journals) and then jump directly to the full-page image of the relevant article in the ACS journal.

In 1994, we also saw the introduction of USPAT-FULL, the full text of US patents and the current classifications for all patents issued by the US Patent and Trademark Office from 1974 to the present.

The odd hiccup

The onward march of STN has, as one would expect, experienced the odd hiccup. In particular, CAS's tax status has, on a number of occasions, been the subject of controversy. Although it operates as a not-for-profit institution, CAS's annual operating profit is now in excess of \$125 million. This has caused local taxpayers to cast envious eyes over CAS's balance sheet. In particular, the Columbus public school system – which is

supported by property taxes – made, over a period of nearly 10 years, repeated challenges to CAS's tax-exempt status with a claim for retrospective payment of property tax. A claim that threatened the financial base of both CAS and, by implication, STN. Fortunately, the matter was finally settled in February 1993, when CAS's tax-exempt status was upheld once and for all.

CAS's not-for-profit status led to a more direct threat to STN in 1990. For a number of years, users and competitors of STN had been arguing that, in not allowing its CA abstracts file to be offered via other online hosts (STN offers the data exclusively) CAS's not-for-profit status was allowing it to undercut competition and thus it was effectively acting in a monopolistic way. The situation came to a head in January 1990. Following CAS's removal of its REGISTRY file from Dialog, Dialog began legal actions against the ACS, demanding up to \$250 million for 'monopolistic and predatory activity'. The ACS responded by counter-suing Dialog for \$40 million for 'fraud and unfair dealing'.

This issue was settled out of court in November 1993. Nevertheless, to the disappointment both of users and competitors, the settlement left the *status quo* intact and, to this day, STN retains exclusive rights to the CA abstracts file. As Stuart Kabak, Scientific Adviser at Exxon Research & Engineering, commented at a meeting in Annecy, France, in autumn 1994: 'It continues to disappoint me that the resolution of the ACS-Dialog lawsuit has not yet led to the licensing of CA's abstracts to alternative hosts.'

Can we expect to see this matter finally resolved? 'The CA abstracts are still only available on STN', confirms Ms Brown. 'We don't rule out the possibility of change, and that could include arranging with another vendor to provide access to the abstracts.' However, she added, this would not necessarily mean loading the abstracts onto a competitor's host computer. 'The new age of advanced networking opens up many possibilities', she explains. 'Although negotiations of that sort haven't moved very far along this point, so we don't have anything to announce.'

In 1994, the STN partners again attracted controversy in the wake of their decision to add a number of business files to the service, which led to further cries of foul play from competitors. As both CAS and FIZ Karlsruhe are the beneficiaries of government funding, it was said, the move represented unfair competition. Commenting on this, Dr Jenschke pointed out that the files were only being made available in order to support the scientific and technical files. 'All we are doing

is following the requests of our users', he explained. 'Scientific database searchers now want to access business data alongside their favourite engineering or chemical files. Our job is to respond to their needs.'

In fact, customers generally welcomed the move and the controversy was short-lived. Nor were the fears of competitors realized as the availability of the business files on STN appears to have had little impact on other hosts and STN now hosts a number of important business databases. In addition to general business files like PROMT and ABI/INFORM, there is a range of industry-specific files, including BIOBUSINESS, CBNB (Chemical Business NewsBase), CIN (Chemical Industry Notes) and MATBUS (Materials Business). The most recent addition is BUSI (The International Business Opportunities Service). In addition, a multi-file search can be conducted using the Scitech Business and News Cluster.

Clearly, the business files offer a very useful addition to the scientific and technical files, allowing searchers to undertake background searches on companies and industries in which they are interested. Moreover, STN has provided some important added value, including, for instance, CAS Registry numbers for chemical substance names in PROMT abstracts, title and controlled-term fields.

The philosophy behind adding business files, says Ms Brown, has not changed. 'STN is a scientific and technical service that also contains some information relevant to the business interests of our customers', she says. 'It doesn't plan to become a general business service or an information supermarket. The business files represent a handful of STN's total coverage and are there because they relate closely to our customers' scientific interests.'

Nevertheless, she adds: 'I would think that any manager in the chemical or pharmaceutical industry might find it useful to search files such as PROMT, INVESTEXT, CHEMICAL AND ENGINEERING NEWS and PHARMAPROJECTS on STN.'

Pricing

To open an account with STN users pay an initial fee of £21.50, with connect time charges ranging from £19 to £197 an hour, depending on the databases accessed. A number of STN partners now offer universities low-price database searching as part of the Academic Programme. There are also a number of online learning files to enable the novice searcher to practise at low cost, and a range of CD-ROM and diskette-based learning tools (the STN Mentor Laboratory training

program series) that allow the user to learn the search process before venturing online by means of simulated learning.

The competitive environment

Historically, STN's two primary competitors have been Dialog and Orbit. As a former Maxwell company, Orbit has had a chequered history. While seen as a cult choice for patent searchers, and responsible for pioneering a number of innovative developments – including the PowerIndex command (which enables users to receive a ranked list of relevant databases and the number of hits in each file) and the PowerSearch command (allowing up to 40 databases to be searched at once) – it has, none the less, been the target of constant speculation, with many predicting its imminent demise. However, Questel's acquisition of Orbit, in March 1994, holds out the promise of a more secure future for the service and suggests that the highly competitive environment in which STN operates will continue. In the short term, of course, Orbit's development can be expected to be sluggish as it is assimilated by Questel – a window of opportunity STN would be well advised to exploit.

Dialog, on the other hand, is probably too broadly focused to compete effectively with STN in the scitech area. While its position as a large supermarket host (currently offering over 450 files) gives Dialog the advantage of a broader collection of files, it is, however, inevitably less focused. It is also reputed to be far less responsive to user needs. As Stuart Kabak pointed out during the Annecy meeting, comparison of the different approaches taken by Dialog and STN to the launch of the full-text US patent database is instructive. During its development, Dialog had signally failed to involve users in the process, he argued, with the result that its implementation of the file is inferior to the later version launched by STN.

This is a view confirmed by Andrew Berks, an organic chemist responsible for the management of scientific and patent information at Wyeth-Ayerst Research. 'While it may not have a history of pioneering developments, STN does a better job', he says.

Another competitor worth mentioning is LEXIS-NEXIS. Traditionally seen as having a problematic interface, it has tended not to be the first port of call for the patent searcher, although a number of the files on the system offer unique characteristics. Under the new ownership of Reed Elsevier (which has articulated a long-term and aggressive electronic future, this could change. Already the release of an impressive new ver-

sion of its Windows interface, which includes the ability to capture images, has begun to make STN Express look a little dated although, as noted below, a new version of STN Express is due for launch later this year.

The user's perspective

STN has earned itself an enviable reputation for the quality of its customer support and offers a range of services, including database handbooks, help desks, regular workshops, training, user meetings and a monthly customer journal, *STNews*. This is appreciated by users. 'STN's customer service is excellent', says Mr Berks, who is also a fan of the US help desk: 'If I don't get through right away, they always return messages within an hour, and the help desk people know the product.'

Comments Mr Kabak: 'STN has become increasingly aggressive (in the best sense) at seeking out user needs and requirements in their databases. It is highly capable and clearly focused on the user. However', he adds, 'Quest*Orbit is still a formidable organization with regard to patents, and people who have used it are very happy with their new QPAT service.'

The inclusion of the business files is also appreciated. Comments Martin Goffman, a US-based information broker: 'The inclusion of some business files on the STN service makes it a much more formidable competitor in my view. Including INVESTEXT and PROMT, for example, adds a new dimension to a Chemical Abstracts search.'

Many users believe that STN could become the first port of call for searchers in need of patent information. As Sue Anliker, an ex-employee of Dow Europe in Switzerland who currently runs her own information consultancy, puts it: 'STN probably has the best range of patent databases now and also new commands to help exploit them. In the past I tended to use Orbit for patent searches but have now to seriously consider changing to STN. Unless the other hosts do something in a hurry, it possibly will become the host of choice for patents.'

Ms Anliker is also enthusiastic about the STN Express software, if a little disgruntled at its cost: 'This improves with each new version', she says, 'although for my needs the features still don't justify the relatively high cost [£160] compared with other online software. The instructions for setting it up outside the US are also inadequate. It took me hours to work out how to create logon scripts.'

Another area of discontent – a view echoed by sev-

eral users – is STN's overall pricing structure. As Ms Anliker comments: 'STN needs to consider its fee structure compared to its competitors. My perception is that it is more expensive to use.'

Not surprisingly, users are nevertheless keen to stress the importance of having a range of competing services to turn to, pointing out that each service has its particular advantages and disadvantages. 'Patent searches, by their very nature, are complex and, depending on the objective of the search, more than one host may need to be used', says Goffman. 'For example, Litalert is an Orbit exclusive; and in some cases the "more" command on LEXIS has proved invaluable. And while the recently loaded Derwent Patent Citation Index on STN is a marked improvement over the Dialog load, Dialog has had it exclusively for over a year and, along with its "map" command, can still be a powerful source.'

Nevertheless, he adds: 'In the area of scientific and technical information I believe that STN is currently unsurpassed by any of its competitors. It has a number of nice features in its search engine and an index file which not only locates the databases that contain the information sought, but also forms the queries to be used in the actual files. I see STN becoming even stronger as time goes on.'

The future

What of the future? In the short term, there are plans to load additional files onto STN. Says Ms Brown: 'We expect to build upon the important subject areas already covered, such as chemistry, regulatory compliance, patents, pharmaceutical science and biotechnology. Working closely with users, we will expand in the direction that science and technology are moving – and that is not entirely predictable. Our goal is not to cover everything, even if that were possible, but to bring the scientific community what it needs.'

In addition, there are plans to introduce a new user-friendly Internet interface. 'This will be available by mid-1996', says Mr Jenschke. 'It will have specific modules for chemistry and patent information and will enable novice searchers to access STN files without the

need to learn sophisticated search commands. This year will also see the release of a new and more powerful version of STN Express.'

Is STN's long-term future threatened by the Internet tidal wave? 'It's likely that, for a long time to come, there will still be different kinds of information users', responds Ms Brown. 'Among them will be the professional searchers on one hand and, on the other, people who use information services less frequently to answer questions encountered in their work. Online services like STN will continue to serve both of those groups. In doing so they will need to continue offering and improving the "traditional" online services while introducing easy-to-use interfaces and new kinds of products for more casual users.'

Nor does Ms Brown believe that CAS's growing range of CD-ROMs and Internet-based services will impact on its STN partnership arrangements. 'As the producer of CAS databases we may choose to create subsets of our data in various media, such as CA on CD-ROM and SciFinder, which are clearly CAS products', she says. 'These are being offered as a new way of accessing CAS information and aimed at users other than the customary audience for STN.'

'Our relationship with FIZ Karlsruhe is solid and productive', she adds. 'We are confident it will remain strong. Likewise, we expect that JICST will continue to be the STN presence in the Far East.'

Further information

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